

**PRIMARY STUDIES OF TRACE QUANTITIES OF GREEN  
VEGETATION IN MONO LAKE AREA USING 1990 AVIRIS DATA\*\***

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Our primary results in Jasper Ridge Biological Preserve indicate that high spectral resolution AVIRIS data may provide a substantial advantage in the detection of trace quantities of green vegetation, based on the chlorophyll red edge feature from 700-780 nm. The chlorophyll red edge was detected for green vegetation cover as low as 4.8%. The objective of our studies in Mono Lake area is to continue the experiments performed in Jasper Ridge and to examine the persistence of red edge feature of trace quantities of green vegetation for different plant communities with non-uniform soil backgrounds.

Mono Lake area contains a wide variation in both rock and soil spectral signatures and vegetation density levels, ranging from sparse desertscrub to pine forests and dense canopies of riparian corridors. High quality AVIRIS data of this area was acquired in 1990. Low altitude aerial photography was used to assist in the location of the field sites in the field and on the AVIRIS data sets. Two types of field sites were selected for the investigation: calibration targets and vegetation test sites. A series of calibration targets covers a spread in ground reflectance from about 0% in NIR (open water) to nearly 70% (salt shell on open sediment) over the AVIRIS bands. The vegetation test sites chosen have all major

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backgrounds versus vegetation combination present in the AVIRIS flight area. The AVIRIS DN spectra for each test site were calibrated to ground reflectance by using an empirical linear regression equation:  $\text{Reflectance} = A + B \cdot \text{DN}$ . The coefficients of A, B were generated from calibration targets. The primary results of this research have shown that the red edge magnitude persistently decrease as green cover densities decrease. But this research is still underway. The detailed results and analyses will be available later.

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